

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

aHD1765
.P48
1985

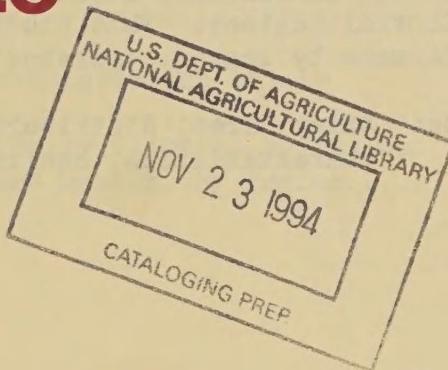
United States
Department of
Agriculture

Economic
Research
Service

National
Economics
Division

U.S. Dairy Farmers in 1979: Financial Characteristics By Operator Age and Dairy Size

R. Neal Peterson



U.S. DAIRY FARMERS IN 1979: FINANCIAL CHARACTERISTICS BY OPERATOR AGE AND DAIRY SIZE. By R. Neal Peterson. National Economics Division, Economic Research Service, U.S. Department of Agriculture, Washington, D.C. 20250. February 1985. ERS Staff Report No. AGES840824

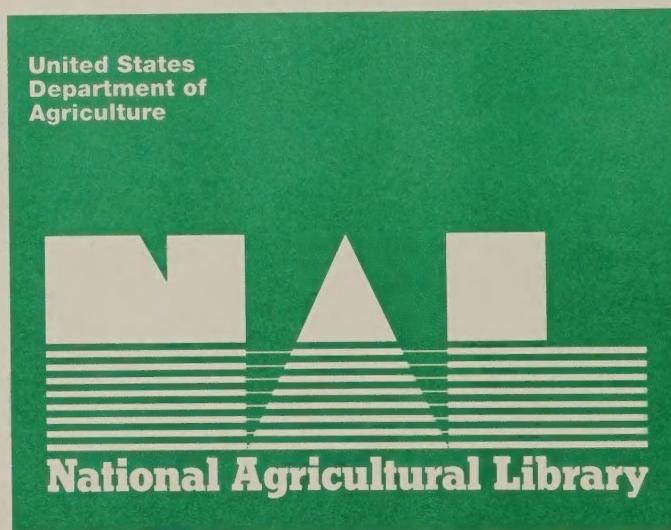
ABSTRACT

Older dairy farmers with small-size farms have less financial debt than do younger dairy farmers and dairy farmers with large-size farms. In 1979, dairy farmers were financially strongest in the Northeast and weakest in the West and South Central regions. This study examines the financial characteristics of dairy farmers by region, operator's age, and dairy size.

Keywords: Dairy farms, distributions, regional comparison, financial characteristics, equity, debt, debt-asset ratio.

ACKNOWLEDGMENTS

The author wishes to thank Ken Baum, Lyle Schertz, and David Harrington for the suggestions and contributions they made which assisted this research.



* This paper was reproduced for limited distribution to *
* the research community outside the U.S. Department of *
* Agriculture. *
*

CONTENTS

	Page
Preface	iii
Overview.....	1
Regional Views.....	4
Northeast.....	6
North Central.....	8
South Atlantic.....	8
South Central.....	11
West.....	11
Appendix tables 1-5--Average financial characteristics of all dairy owners, by region.....	14
Appendix tables 6-10--Distribution of SIC dairy farmers, by region.	19
Appendix tables 11-15--Distribution of dairy owners, by region.....	24

PREFACE

This study is the result of an experiment in research cooperation between the Agriculture Division of the Bureau of Census, and the Economic Research Service (ERS) in the U.S. Department of Agriculture (USDA). The findings in this manuscript are the result of work by ERS research economists who have been permitted to directly analyze Census respondent data using the Statistical Package for the Social Sciences (SPSS). This research arrangement allows a significant increase in the range, precision, and type of questions about U.S. agriculture that can be explored using Census data. The opportunities for exploratory analysis in initial stages of inquiry are also greater because of this arrangement. Questions concerning the distributions of agricultural producers and their correspondent characteristics have often been especially difficult to address. Overall, the result of this experiment has been to exploit the potential of Census data more fully and to draw increased attention to the richness of available data.

Certain analytical problems related to the use of Census data remain. The need to preserve confidentiality, which prohibits the disclosure of any individual observation, is very important. Thus, all data values that would result in a disclosure must be suppressed. This requirement can restrict analysis to a certain extent. In this study, large geographic regions were required in order to ensure that the cross tabulation of the dairy farm population into a 25-cell table did not result in any disclosures. Nevertheless, even where disclosure is not a problem, readers must exercise caution in drawing statistical inferences because many estimates of cell means are based on fewer than 10 observations as a result of the method of stratified sampling employed in the Finance Follow-On Survey. These particular data cannot be considered completely reliable.

U.S. Dairy Farmers in 1979: Financial Characteristics By Operator Age and Dairy Size

R. Neal Peterson

OVERVIEW

Older dairy farmers with small-size farms have less financial debt than do younger dairy farmers and dairy farmers with large-size farms. In 1979, dairy farmers were financially strongest in the Northeast and weakest in the West and South Central regions. This study examines the financial characteristics of dairy farmers by region, operator's age, and dairy size.

This paper presents the financial positions of U.S. dairy farmers as of December 31, 1979. The 1978 Census of Agriculture included a Follow-On Financial Survey, taken in 1979, of a stratified sample of U.S. farms; these are the most recent financial data available. Dairy farms are defined by the Standard Industrial Classification (SIC) criterion as being operations that derive 50 percent or more of gross farm income from the sale of dairy products. The author examined the following summary financial variables of dairy farm operations: equity, debt, and the debt-asset ratio. Because the financial position of farmers depends heavily on the operator's age and the size of operation and varies generally from region to region, the author examined the distribution of the financial characteristics by region, age, and size (tables 1 and 2). For the purposes of this study, "size" refers to the value of a farmer's dairy inventory.

The distribution of operators by age did not vary much among regions: 46 to 55 years of age was the most prevalent class (about 30 percent) although the two neighboring classes, 36 to 45 and 56 to 65, were similar in size (around 20 percent each). The distribution of operations by size varied more between regions than did the distribution by age.

In general, four of the five regions displayed an underlying regularity in the distribution of size. Dairy operations generally center on two distinct sizes, the \$15,001-\$45,000 value range and the \$75,001-\$300,000 value range. The presence of two distinct sizes of operation suggests the existence of two quite different production technologies, each of which has different scale economies (hence different optimal sizes) associated with it. Thus, dairy farms appear to be either those that raise forage and feedstuffs or those that purchase feedstuffs (drylot dairy). The \$75,001-\$300,000 class covers a wide interval; drylot dairy operations are probably concentrated nearer the \$300,000 end of that interval.

Older operators tend to be associated with smaller operations; younger operators tend to be more heavily indebted; and the largest size operations tend to be most heavily in debt. Younger operators with smaller farms generally had equity of around \$35,000, debts of around \$25,000, and debt-asset ratios of around 30 percent. Older operators with smaller farms generally had equity of around \$60,000, debts of around \$2,000, and debt-asset ratios of around

Table I--Distribution of farmers who derive at least 50 percent of their income from dairy, by region and by size

	Regions			
	Northeast	North Central	South Atlantic	South Central
Value of dairy animals				
Less than \$15,000:				
Number	4,672	16,038	1,111	2,134
Column percent	13	18	15	16
\$15,001-45,000:				
Number	12,786	35,992	1,364	4,019
Column percent	36	41	18	30
\$45,001-75,000:				
Number	9,065	21,787	1,431	2,710
Column percent	25	25	19	20
\$75,001-300,000:				
Number	9,106	14,035	3,272	4,445
Column percent	25	16	43	33
Over \$300,000:				
Number	326	345	402	101
Column percent	1	<1	5	1
All classes:				
Number	35,955	88,197	7,580	13,418
Percent of United States	23	57	5	9

Table 2--Distribution of farmers who derive at least 50 percent of their income from dairy, by region and by age

Age of operator	Regions		<u>South Central</u>	<u>South Atlantic</u>	<u>West</u>
	<u>Northeast</u>	<u>North Central</u>			
<i>Less than 36 years:</i>					
Number	7,413	15,497	1,459	2,526	1,519
Column percent	21	18	19	19	16
<i>36 to 45 years:</i>					
Number	8,074	17,714	1,525	3,294	2,083
Column percent	22	20	20	24	23
<i>46 to 55 years:</i>					
Number	10,100	27,156	2,398	4,246	3,114
Column percent	28	31	32	32	34
<i>56 to 65 years:</i>					
Number	8,033	22,722	1,776	2,301	1,910
Column percent	22	26	23	17	21
<i>66 years or more:</i>					
Number	2,335	5,108	422	1,051	579
Column percent	7	6	6	8	6

5 percent. Younger operators with larger farms generally had equity of around \$500,000, debts of around \$500,000, and debt-asset ratios of around 50 percent. Older operators with larger farms generally had equity of around \$700,000, debts of around \$400,000, and debt-asset ratios of around 30 percent.

In every region of the country a considerable proportion of dairy owners are farmers for whom dairy is a secondary enterprise (these are defined as operators who own dairy cattle but who are not SIC dairy operations because they earn less than 50 percent of their gross farm income from dairy sales). The Northeast has the highest proportion of farmers who own dairy, 35 percent, and the lowest proportion of dairy owners for whom dairy is a secondary enterprise, 31 percent (table 3). The North Central region is intermediate in both proportions. The other regions are low in the proportion of farmers who own dairy animals; a high proportion of these are small, secondary enterprises. In regions where dairy has a comparative advantage in agriculture, not only do more farms engage in dairy production, but these farms with dairy operations specialize more in dairy operations production.

REGIONAL VIEWS

For the purposes of this study, the United States is divided into the five regions depicted in figure 1. The five regions are Northeast (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania), North Central (Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas), South Atlantic (Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida), South Central (Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Texas, Oklahoma), and West (Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, Hawaii).

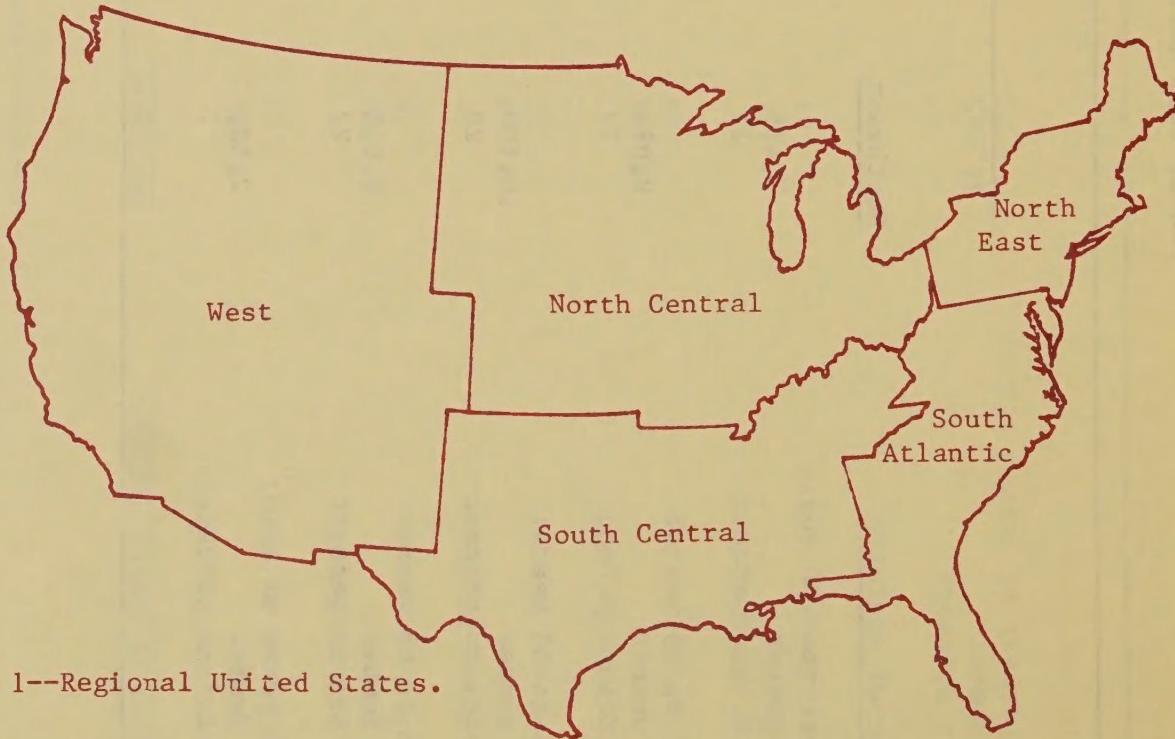


Figure 1--Regional United States.

Table 3--Regional concentrations of dairy owners

Item	Regions				<u>Percent</u>
	<u>Northeast</u>	<u>North Central</u>	<u>South Atlantic</u>	<u>South Central</u>	
Proportion of farms which are primarily dairies	23	57	5	9	6
Proportion of dairy owners	18	53	7	13	9
Proportion of farms with dairy animals	35	15	6	6	9
Proportion of dairy owners who are primarily dairy farmers	69	57	37	36	35
Of those dairy owners who are not primarily dairy farmers, the proportion having a small dairy enterprise (less than \$15,000 of dairy animals)	86	71	93	87	91

The tables that accompany the following regional views are vital to understanding the condition of the dairy sector of each region. The regional distributions of dairy farms by age and size vary a great deal. The financial conditions of dairy in the different regions also vary widely; but the distributional pattern of financial characteristics does not vary significantly among regions. The differences in regional financial characteristics result primarily from the differences in age and size structure.

The shape of each region's distribution of dairy farms is represented on the tables by two different levels of concentration, which can be read like contour lines on a topographic map. The solid interior line encloses the two or three cells of the table containing the greatest concentration of dairy farmers, which together account for at least 24 percent of all dairy farmers in that region. This line roughly corresponds to an isoquant of an 8-percent frequency. The broken exterior line encloses those eight or nine cells of greatest concentration that account for at least 67 percent of all producers in the region. This exterior line roughly corresponds to an isoquant of a 5-percent frequency. These two groups of farmers will be subsequently referred to as the "24-percent mode" and the "67-percent mode." The tables showing the joint distributions of farms across age and value for the five regions are found in appendix tables 6 through 15.

Northeast

The Northeast contains nearly 20 percent of all dairy owners in the United States. It is the most highly specialized of the five regions in dairy production, with over 33 percent of all farms reporting dairy animals, and over 67 percent of those qualifying as SIC dairy farms. As was typical of the United States, nearly 90 percent of "non-SIC dairy" dairy owners were small, with less than \$15,000 worth of dairy animals. The age distribution of SIC dairy farmers is younger than the other four regions. Their size distribution is generally smaller than all other regions except the North Central.

Within the 67-percent mode, medium size operations predominate (table 4). This group of farmers contains a great mix of financial characteristics. The oldest farmers with the largest farms in the group have an average net worth of \$246,200; the youngest farmers with the smallest farms in the group have an average net worth of \$49,200. The average debt-asset ratio for the group varies from a low of 8 percent for the oldest operators with the smallest farms, to a high of 56 percent for the youngest operators with the largest farms. The incidence of zero (or negative) net worth basically follows the rise and fall of debt-asset ratios, from a low of 0 percent to a high of 22 percent.

Like the Southern and Western states, the Northeast shows evidence of a division between two sizes of operations (table 4). Smaller operations (\$15,001-\$45,000 worth of dairy animals) generally predominate, with 17.6 percent; larger operations account for 8.7 percent. The longer term financial condition of the smaller mode dairy farmers in 1979 was better in the Northeast than elsewhere. The debt-asset ratios were lower, and the proportion of those farmers with zero or negative equity was lower. The relatively favorable financial condition of these 24 percent modal dairy farms is especially noteworthy when compared with the South Atlantic, South Central, and West.

Table 4--Average financial characteristics of SIC dairy farmers--Northeast

Value of dairy animals

Age of operator and financial characteristics	Less than \$15,000	\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000	More than \$300,000
Less than 36 years:					
Equity (dollars)	34,400*	49,200	68,100	176,800	430,100*
Debt (dollars)	34,700	49,800	86,000	121,000	419,600
Debt/asset ratio	.50	.47	.56	.41	.58
Percent with no equity	.22	10	15	1	15
36-45 years:					
Equity (dollars)	64,100	82,900	137,600	228,900	575,400
Debt (dollars)	2,600	4,900	74,300	106,400	294,200
Debt/asset ratio	.10	.30	.34	.31	.46
Percent with no equity	0	8	< 1	2	11
46-55 years:					
Equity (dollars)	68,100	101,000	138,300	246,200	775,200
Debt (dollars)	21,900	24,700	51,000	117,400	327,400
Debt/asset ratio	.37	.17	.32	.33	.29
Percent with no equity	7	< 1	9	2	0
56-65 years:					
Equity (dollars)	50,500	102,800	162,600	288,300	797,200*
Debt (dollars)	7,700	9,100	36,900	103,800	311,100
Debt/asset ratio	.09	.08	.21	.27	.30
Percent with no equity	0	0	< 1	9	0
66 years or more:					
Equity (dollars)	57,800	109,000	168,200	305,100	668,700*
Debt (dollars)	800	7,400	36,100	43,700	243,100
Debt/asset ratio	.01	.01	.06	.12	.23
Percent with no equity	0	2	0	0	0

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

North Central

The North Central region is the largest dairy region of the country, containing over 50 percent of all U.S. dairy owners. As a whole, the North Central is not highly specialized in dairy; only 15 percent of the farms there are SIC dairies. However, over 50 percent of all dairy owners are SIC dairies. In addition, dairy was a fairly important secondary enterprise for many farms. Although most "non-SIC dairy" dairy owners are small, 29 percent had dairy herds valued at more than \$15,000, over double the proportion found in other regions.

In general, North Central dairy farmers are older and own smaller farms than in the other regions (tables 1 and 2). Compared to the other regions, the 67-percent mode of dairy farmers is relatively uniform. Average equity values range from \$60,300 for the youngest farmers with the smallest farms to \$143,000 for the oldest farmers with the largest farms. Average debt-asset ratios vary from 11 percent to 62 percent. The incidence of farms with debts equal to or exceeding assets (zero or negative equity) varies from 0 to 29 percent. This incidence of insolvency is worse for the 67-percent mode in the North Central region than in any other region.

Unlike all other regions, which show a concentration of farms at the larger mode of operation (\$75,001-\$300,000 value of dairy animals), the North Central region reveals no similar mode. In fact, even the 67-percent mode does not include any farms in the \$75,001-\$300,000 range. The majority of farms in the 67-percent mode did not reflect poor financial conditions. This could be a reflection of more conservative farm growth and debt acquisition behavior by older farmers with smaller farms. However, young farmers in the 67-percent mode (those under 35 years of age) are in worse financial condition as compared with their counterparts in other regions, as shown by a high incidence of negative net worth.

South Atlantic

The South Atlantic is a minor dairy region, containing only 7 percent of all the dairy owners in the United States. Only 6 percent of the region's farmers own dairy animals, and only 37 percent of dairy owners are SIC dairy farmers. Most dairy owners have dairy as a small secondary enterprise; 93 percent of "non-SIC dairy" dairy owners have less than \$15,000 worth of dairy animals.

The age distribution of South Atlantic dairy farmers tends slightly more toward middle-age compared with the other regions. The size distribution of these dairy operations tends to be larger than in any other region except the West (tables 1 and 2). The bulk of dairy farmers (the 67-percent mode) ranges across nearly all sizes of operations, from less than \$15,000 up to \$300,000 worth of dairy animals. However, the 24-percent mode occurs only at the larger size (\$75,001-\$300,000). Within the 67-percent mode, average equity values vary a great deal, from \$42,500 for the oldest operators with the smallest farms, to \$281,800 for middle-age operators with the largest farms. Average debt-asset ratios vary from 55 percent for the youngest operators with large farms to 4 percent for the oldest operators with small farms. Younger farmers (ages less than 46) with the largest farms appear as a group to be in some financial distress. Debt-asset ratios average over 50 percent, and 14 percent of these farmers have zero or negative net worth. However, they are not as distressed as North Central young farmers. On average, dairy farms in the South Atlantic appear to be in tenable financial situations.

Table 5--Average financial characteristics of SIC dairy farmers--North Central

Age of operator and financial characteristics	Value of dairy animals				More than \$300,000
	Less than \$15,000	\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000	
Less than 36 years:					
Equity (dollars)	74,200	60,300	94,300	150,100	D
Debt (dollars)	23,400	55,900	77,500	125,900	D
Debt/asset ratio	.33	.62	.48	.42	D
Percent with no equity	9	29	17	2	D
36-45 years:					
Equity (dollars)	24,100*	69,400	125,200	229,500	1,404,100*
Debt (dollars)	22,800	52,000	95,400	164,400	1,917,800
Debt/asset ratio	.36	.42	.45	.42	.57
Percent with no equity	9	6	6	7	6
46-55 years:					
Equity (dollars)	67,400	102,300	143,000	241,800	390,800
Debt (dollars)	11,200	33,600	62,600	143,700	516,500
Debt/asset ratio	.17	.28	.29	.28	.62
Percent with no equity	3	7	2	2	0
56-65 years:					
Equity (dollars)	46,600	111,200	171,800	237,600	791,800*
Debt (dollars)	14,600	9,400	38,700	125,800	110,700
Debt/asset ratio	.16	.11	.19	.37	.10
Percent with no equity	4	0	0	5	0
66 years or more:					
Equity (dollars)	52,600	107,100	160,400*	305,300	N
Debt (dollars)	200	4,300	52,500	127,700	N
Debt/asset ratio	< .01	.01	.05	.30	N
Percent with no equity	0	0	0	0	N

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

D = Disclosure prohibited; 2 or 1 observations.

N = No observations in sample.

Table 6--Average financial characteristics of SIC dairy farmers--South Atlantic

Value of dairy animals

Age of operator and financial characteristics	Less than \$15,000	\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000	More than \$300,000
Less than 36 years:					
Equity (dollars)	48,500*	59,500*	74,500	146,900	377,000
Debt (dollars)	17,800	26,500	41,300	192,000	615,900
Debt/asset ratio	.19	.30	.30	.55	.63
Percent with no equity	0	1	12	14	4
36-45 years:					
Equity (dollars)	41,400*	120,300	165,000	192,900	700,900
Debt (dollars)	300	38,300	43,200	187,800	453,800
Debt/asset ratio	< .01	.27	.18	.50	.45
Percent with no equity	0	0	7	14	10
46-55 years:					
Equity (dollars)	77,300	119,000	92,800	281,800	647,800
Debt (dollars)	7,100	29,200	116,300	75,300	465,500
Debt/asset ratio	.09	.22	.49	.20	.37
Percent with no equity	0	8	11	0	1
56-65 years:					
Equity (dollars)	42,500*	103,400	134,100	277,400	717,300
Debt (dollars)	1,900	16,700	38,200	73,100	433,500
Debt/asset ratio	.04	.15	.17	.22	.45
Percent with no equity	0	4	0	0	17
66 years or more:					
Equity (dollars)	85,800	95,700*	100,300*	267,500	530,200*
Debt (dollars)	200	5,600	47,300	143,900	565,400
Debt/asset ratio	< .01	.05	.42	.32	.40
Percent with no equity	0	0	0	19	15

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

South Central

The South Central region, like the South Atlantic, is a minor dairy region. It contains only 13 percent of U.S. dairy owners, and only 6 percent of the region's farmers own any dairy animals. Only 36 percent of dairy owners qualify as SIC dairy farmers. Most dairy owners have dairy as a secondary enterprise; 87 percent of "non-SIC dairy" dairy owners have less than \$15,000 worth of dairy animals.

South Central dairy farmers are younger on the whole than dairy farmers in other regions except for the Northeast (table 2). The distribution of farm sizes in this region is strongly divided between the two sizes mentioned earlier, with a slight preponderance of the larger size operations, \$75,001-\$300,000 worth of dairy animals (app. table 9). Within the 67-percent mode, average equity values range from \$56,400 for the smallest operation to \$230,300 for the largest operation. Average debt-asset ratios within this group vary from 61 percent for the youngest operators with smaller farms to 4 percent for older operators with small farms. For reasons that remain unclear, smaller operations within the 67-percent mode (\$15,001-\$45,000 worth of dairy animals) seem to be in relatively worse financial positions than the larger operations, as shown by their debt-asset ratios and the percentage of producers whose net worth is zero or negative. This situation contrasts with the situation in the other four regions where the smaller operations are in relatively stronger financial positions.

West

The West, like the South Atlantic and the South Central regions, is not a major dairy region. It accounts for only 9 percent of all U.S. dairy owners. Only 9 percent of the farms own any dairy, and only 35 percent of those farms are SIC dairy farms. Most dairy owners have dairy as a subsidiary enterprise; 91 percent of "non-SIC dairy" dairy owners have less than \$15,000 worth of dairy animals.

The age distribution of the region's dairy farmers is relatively older than in regions other than the North Central. The size distribution is the largest of the five regions. The bulk of the producers (the 67-percent mode) occurs at all sizes greater than \$15,000. As has been the case in all the other regions, average equity values vary a great deal, from a high of \$677,700 for the oldest operators with the largest farms, to a low of \$91,700 for the oldest operators with small farms. Average debt-asset ratios vary from a high of around 51 percent for the youngest operators with the largest farms, to a low of 7 percent for the oldest operators with the smallest farms. As in the South Central and Northeast regions, the West contains both the smaller and larger operations as separate modes of concentration, with the great preponderance occurring in the large sizes. The West is the only region in which the very largest operations (more than \$300,000 worth of dairy animals) fall within the most concentrated 67 percent of the population. These larger western dairy farmers are characterized by very high debt-asset ratios. Overall, the West has a higher average debt-asset ratio than the other regions. However, insolvency (the percent with debts in excess of assets) is not correspondingly higher. Thus, the indication of longer term financial distress does not appear to be greater than in the South Atlantic or the South Central States.

Table 7--Average financial characteristics of SIC dairy farmers--South Central

Age of operator and financial characteristics	Value of dairy animals				More than \$300,000
	Less than \$15,000	\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000	
Less than 36 years:					
Equity (dollars)	-3,300*	35,700*	95,300	154,700	659,700*
Debt (dollars)	26,400	15,800	77,900	119,100	179,800
Debt/asset ratio	.50	.41	.43	.44	.15
Percent with no equity	1.2	0	4	3	8
36-45 years:					
Equity (dollars)	37,000*	67,200	150,900	147,700	394,800*
Debt (dollars)	15,100	61,900	50,400	150,500	264,600
Debt/asset ratio	.18	.61	.28	.48	.34
Percent with no equity	0	15	0	13	4
46-55 years:					
Equity (dollars)	19,500	66,300	125,600	230,300	767,000
Debt (dollars)	13,700	22,800	34,300	86,100	956,300
Debt/asset ratio	.21	.39	.22	.27	.46
Percent with no equity	0	15	10	2	0
56-65 years:					
Equity (dollars)	56,400*	91,300	164,900*	224,800	539,100*
Debt (dollars)	2,800	10,200	25,400	106,300	566,200
Debt/asset ratio	.03	.10	.12	.37	.47
Percent with no equity	0	0	0	3	0
66 years or more:					
Equity (dollars)	66,200	60,500*	N	148,300*	1,341,000*
Debt (dollars)	5,900	12,200	N	232,600	427,500
Debt/asset ratio	.05	.17	N	.68	.29
Percent with no equity	0	0	N	15	0

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.
N = No observations in sample.

Table 8--Average financial characteristics of SIC dairy farmers--West

Value of dairy animals

Age of operator and financial characteristics	Value of dairy animals			\$75,001-\$300,000	More than \$300,000
	Less than \$15,000	\$15,001-\$45,000	\$45,001-\$75,000		
Less than 36 years:					
Equity (dollars)	35,600*	-16,200	22,000*	152,900	389,500
Debt (dollars)	11,700	89,500	143,700	151,200	550,500
Debt/asset ratio	.22	.98	.93	.51	.58
Percent with no equity	0	58	37	9	19
36-45 years:					
Equity (dollars)	15,300*	88,600*	94,900	152,500	537,000
Debt (dollars)	143,300	29,600	111,900	214,200	580,000
Debt/asset ratio	.54	.23	.53	.53	.51
Percent with no equity	2	0	12	9	12
46-55 years:					
Equity (dollars)	84,800	96,900	144,000	221,500	677,700
Debt (dollars)	27,100	29,300	41,200	103,600	470,800
Debt/asset ratio	.27	.20	.23	.30	.42
Percent with no equity	1	0	0	7	8
56-65 years:					
Equity (dollars)	25,000*	91,700	139,200	266,000	750,100
Debt (dollars)	0	5,400	42,000	79,500	343,500
Debt/asset ratio	0	.07	.21	.22	.28
Percent with no equity	0	0	3	3	5
66 years or more:					
Equity (dollars)	66,600*	111,200*	181,800*	248,500*	1,292,400
Debt (dollars)	3,500	2,000	2,100	26,600	437,800
Debt/asset ratio	.01	.01	.01	.07	.20
Percent with no equity	0	0	0	0	4

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

Appendix table 1--Average financial characteristics of all dairy owners--Northeast

Age of operator and financial characteristics	Value of dairy animals				More than \$300,000
	\$ Less than \$15,000	\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000	
Less than 36 years:					
Equity (dollars)	40,500	47,800	67,800	184,500	430,100*
Debt (dollars)	18,400	48,900	81,800	120,100	419,600
Debt/assets ratio	.37	.48	.53	.40	.42
Percent with no equity	14	9	14	1	15
36-45 years:					
Equity (dollars)	71,900	85,300	142,600	231,700	575,400
Debt (dollars)	25,900	47,700	71,600	105,600	291,200
Debt/assets ratio	.15	.29	.33	.31	.46
Percent with no equity	3	7	< 1	1	11
46-55 years:					
Equity (dollars)	55,100	102,900	136,100	249,200	786,800
Debt (dollars)	15,000	27,400	50,300	118,300	345,000
Debt/assets ratio	.25	.18	.32	.33	.30
Percent with no equity	7	< 1	9	2	0
56-65 years:					
Equity (dollars)	52,900	109,700	162,400	290,500	790,000
Debt (dollars)	4,000	9,700	35,300	103,400	297,800
Debt/assets ratio	.05	.07	.20	.27	.29
Percent with no equity	0	0	< 1	9	0
66 years or more:					
Equity (dollars)	57,300	108,700	169,200	341,900	668,700
Debt (dollars)	1,700	8,500	37,100	43,400	243,100
Debt/assets ratio	.01	.07	.21	.12	.23
Percent with no equity	0	2	11	0	0

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

Appendix table 2--Average financial characteristics of all dairy owners--North Central

Value of dairy animals

Age of operator and financial characteristics	Value of dairy animals			
	Less than \$15,000	\$15,001-45,000	\$45,001-75,000	\$75,001-300,000
Less than 36 years:				More than \$300,000
Equity (dollars)	46,600	53,200	98,100	125,500
Debt (dollars)	25,200	71,600	84,400	143,000
Debt/asset ratio	.35	.64	.50	.54
Percent with no equity	8	24	18	0
36-45 years:				
Equity (dollars)	40,400	83,600	103,500	208,700
Debt (dollars)	28,100	52,900	120,100	186,800
Debt/asset ratio	.50	.39	.52	.47
Percent with no equity	11	8	13	11
46-55 years:				
Equity (dollars)	65,700	100,500	150,400	236,100
Debt (dollars)	23,000	45,400	74,600	159,700
Debt/asset ratio	.25	.34	.31	.41
Percent with no equity	5	8	3	3
56-65 years:				
Equity (dollars)	59,600	111,000	173,800	235,000
Debt (dollars)	18,800	13,500	40,800	156,600
Debt/asset ratio	.22	.14	.19	.41
Percent with no equity	7	< 1	0	9
66 years or more:				
Equity (dollars)	36,600	110,700	81,600	305,300
Debt (dollars)	10,900	7,900	130,700	127,700
Debt/asset ratio	.21	.06	.57	.30
Percent with no equity	3	0	22	0

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

N = No observations in sample.

Appendix table 3--Average financial characteristics of all dairy owners--South Atlantic

Age of operator and financial characteristics	Value of dairy animals			
	Less than \$15,000	\$15,001-45,000	\$45,001-75,000	\$75,001-300,000
Less than 36 years:				
Equity (dollars)	30,100	41,500	74,500*	118,200
Debt (dollars)	25,200	69,600	41,300	170,900
Debt/assets ratio	.46	.50	.30	.62
Percent with no equity	14	23	12	11
36-45 years:				
Equity (dollars)	30,300	98,100	152,300	198,400
Debt (dollars)	15,600	92,800	48,400	186,500
Debt/assets ratio	.26	.41	.24	.49
Percent with no equity	2	0	6	14
46-55 years:				
Equity (dollars)	42,700	125,800	83,400	282,600
Debt (dollars)	9,900	33,900	122,100	80,100
Debt/assets ratio	.17	.25	.54	.21
Percent with no equity	2	9	17	0
56-65 years:				
Equity (dollars)	35,100	102,700	143,700	275,900
Debt (dollars)	7,100	19,600	37,800	75,300
Debt/assets ratio	.09	.17	.16	.22
Percent with no equity	4	3	0	0
66 years or more:				
Equity (dollars)	38,800	99,100	100,300*	267,500
Debt (dollars)	700	4,800	47,300	143,900
Debt/assets ratio	.03	.05	.42	.32
Percent with no equity	0	0	0	19

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

Appendix table 4--Average financial characteristics of all dairy owners--South Central

Age of operator and financial characteristics	Value of dairy animals		
	Less than \$15,000	\$15,001-45,000	\$45,001-75,000
Less than 36 years:			
Equity (dollars)	10,100	29,300	82,300
Debt (dollars)	15,800	72,800	79,100
Debt/asset ratio	.38	.61	.45
Percent with no equity	16	15	8
36-45 years:			
Equity (dollars)	37,500	52,200	149,300
Debt (dollars)	23,400	61,600	62,500
Debt/asset ratio	.39	.64	.32
Percent with no equity	11	20	5
46-55 years:			
Equity (dollars)	34,900	70,800	124,700
Debt (dollars)	31,600	26,500	27,400
Debt/asset ratio	.25	.36	.16
Percent with no equity	5	11	7
56-65 years:			
Equity (dollars)	38,200	90,700	158,100*
Debt (dollars)	8,800	12,000	22,100
Debt/asset ratio	.23	.11	.09
Percent with no equity	6	0	0
66 years or more:			
Equity (dollars)	41,900	67,400*	N
Debt (dollars)	11,300	11,300	N
Debt/asset ratio	.04	.16	N
Percent with no equity	0	0	N

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

N = No observations in sample.

Appendix table 5--Average financial characteristics of all dairy owners--West

Value of dairy animals

Age of operator and financial characteristics	Less than \$15,000	\$15,001-45,000	\$45,001-75,000	\$75,001-300,000	More than \$300,000
Less than 36 years:					
Equity (dollars)	40,900	41,100*	3,800	153,600	389,500
Debt (dollars)	32,500	38,600	156,400	147,700	550,500
Debt/asset ratio	.50	.69	1.00	.50	.58
Percent with no equity	17	25	36	8	19
36-45 years:					
Equity (dollars)	27,400	94,200	93,900	138,700	520,800
Debt (dollars)	86,300	26,800	99,600	261,600	611,600
Debt/asset ratio	.72	.20	.49	.55	.51
Percent with no equity	27	0	9	9	12
46-55 years:					
Equity (dollars)	86,500	102,000	142,800	222,900	664,900
Debt (dollars)	33,200	40,400	51,200	129,400	483,900
Debt/asset ratio	.32	.22	.24	.32	.42
Percent with no equity	4	0	1	6	9
56-65 years:					
Equity (dollars)	67,100	139,000	136,000	276,000	734,500
Debt (dollars)	30,900	15,300	39,100	83,400	368,200
Debt/asset ratio	.21	.08	.22	.23	.29
Percent with no equity	8	< 1	7	3	5
66 years or more:					
Equity (dollars)	70,300	100,700*	181,800*	204,800*	1,292,400
Debt (dollars)	24,900	8,400	2,100	101,100	437,800
Debt/asset ratio	.20	.14	.01	.27	.20
Percent with no equity	6	0	0	19	4

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

Appendix table 6--Distribution of SIC dairy farmers--Northeast

Age of operator: Item	Value of dairy animals			
	\$15,000 Less than \$15,000	\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000
Less than 36 years:				
Number	512*	2,867	2,421	1,531
Row percent	6.9	38.7	32.7	20.7
Column percent	11.0	22.4	26.7	16.8
Total percent	1.4	8.0	6.7	4.3
36-45 years:				
Number	856	2,804	1,813	2,491
Row percent	10.6	34.7	22.5	30.9
Column percent	18.3	21.9	20.5	27.4
Total percent	2.4	7.8	5.0	6.9
46-55 years:				
Number	1,086	3,360	2,450	3,125
Row percent	10.8	33.3	24.3	30.9
Column percent	23.2	26.3	27.0	34.3
Total percent	3.0	9.3	6.8	8.7
56-65 years:				
Number	1,421	2,989	1,900	1,684
Row percent	17.7	37.2	23.7	21.0
Column percent	30.4	23.4	21.0	18.5
Total percent	4.0	8.3	5.3	4.7
66 years or more:				
Number	797	766	481	275
Row percent	34.1	32.8	20.6	11.8
Column percent	17.1	6.0	5.3	3.0
Total percent	2.2	2.1	1.3	.8

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

Appendix table 7--Distribution of SIC dairy farmers--North Central

		Value of dairy animals				
Age of operator:		Less than \$15,000	\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000	More than \$300,000
Item						
Less than 36 years:						
Number		1,644	5,575	5,003	3,257	D
Row percent		10.6	36.0	32.3	21.0	D
Column percent		10.3	15.5	23.0	23.2	D
Total percent		1.9	6.3	5.7	3.7	D
36-45 years:						
Number		1,881*	7,052	5,015	3,732	34*
Row percent		10.6	39.8	28.3	21.1	.2
Column percent		11.7	19.6	23.0	26.6	9.9
Total percent		2.1	8.0	5.7	4.2	.0
46-55 years:						
Number		4,963	10,785	6,993	4,247	168
Row percent		18.3	39.7	25.8	15.6	.6
Column percent		30.9	30.0	32.1	30.3	48.7
Total percent		5.6	12.2	7.9	4.8	.2
56-65 years:						
Number		5,155	10,568	4,359	2,515	125
Row percent		22.7	46.5	19.2	11.1	.6
Column percent		32.1	29.4	20.0	17.9	36.2
Total percent		5.8	12.0	4.9	2.9	.1
66 years or more:						
Number		2,395	2,012	417*	284	0*
Row percent		46.9	39.4	8.2	5.6	0
Column percent		14.9	5.6	1.9	2.0	0
Total percent		2.7	2.3	.5	.3	0

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.
 D = Disclosure prohibited; 2 or 1 observations.

Appendix table 8--Distribution of SIC dairy farmers--South Atlantic

		Value of dairy animals			
Age of operator:		\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000	More than \$300,000
Item	Less than \$15,000				
Less than 36 years:					
Number	242*	328*	188*	656	45
Row percent	16.6	22.5	12.9	45.0	3.1
Column percent	21.8	24.0	13.1	20.0	11.2
Total percent	3.2	4.3	2.5	8.7	.6
36-45 years:					
Number	23*	248	363	810	81
Row percent	1.5	16.3	23.8	53.1	5.3
Column percent	2.1	18.2	25.4	24.8	20.1
Total percent	.3	3.3	4.8	10.7	1.1
46-55 years:					
Number	385	370	466	1,032	145
Row percent	16.1	15.4	19.4	43.0	6.0
Column percent	34.7	27.1	32.6	31.5	36.1
Total percent	5.1	4.9	6.1	13.6	1.9
56-65 years:					
Number	406*	250	360	677	83
Row percent	22.9	14.1	20.3	38.1	4.7
Column percent	36.5	18.3	25.2	20.7	20.6
Total percent	5.4	3.3	4.7	8.9	1.1
66 years or more:					
Number	55*	168*	97	48*	
Row percent	13.0	39.8	12.8	23.0	11.4
Column percent	5.0	12.3	3.8	3.0	11.9
Total percent	.7	2.2	.7	1.3	.6

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

Appendix table 9--Distribution of SIC dairy farmers--South Central

Value of dairy animals

Age of operator: Item	Value of dairy animals				More than \$300,000
	\$ Less than \$15,000	\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000	
Less than 36 years:					
Number	281*	347*	789	1,096	13*
Row percent	11.1	13.7	31.2	43.4	.5
Column percent	13.1	8.6	29.1	24.7	12.9
Total percent	2.1	2.6	5.9	8.2	.1
36-45 years:					
Number	312*	973	538	1,448	23*
Row percent	9.5	29.5	16.3	44.0	.7
Column percent	14.6	24.2	19.9	32.6	22.8
Total percent	2.3	7.3	4.0	10.8	.2
46-55 years:					
Number	367*	1,214	1,191	1,435	39
Row percent	8.6	28.6	28.0	33.8	.9
Column percent	17.1	30.2	43.9	32.3	38.6
Total percent	2.7	9.0	8.9	10.7	.3
56-65 years:					
Number	804*	889	192*	394	22*
Row percent	34.9	38.6	8.3	17.1	1.0
Column percent	37.5	22.1	7.1	8.9	21.8
Total percent	6.0	6.6	1.4	2.9	.2
66 years or more:					
Number	379*	596*	0*	72*	4*
Row percent	36.1	56.7	0	6.9	.4
Column percent	17.7	14.8	0	1.6	4.0
Total percent	2.8	4.4	0	.5	.0

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

Appendix table 10--Distribution of SIC dairy farmers--West

Age of operator: Item	Value of dairy animals			
	Less than \$15,000	\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000
Less than 36 years:				
Number	109*	78*	217*	289
Row percent	7.2	5.1	14.3	19.0
Column percent	12.4	4.2	20.1	15.8
Total percent	1.2	.8	2.4	3.1
36-45 years:				
Number	155*	283*	887	516
Row percent	7.4	13.6	42.6	24.8
Column percent	17.6	15.1	25.0	28.2
Total percent	1.7	3.1	2.6	5.6
46-55 years:				
Number	339	818	999	581
Row percent	10.9	26.3	32.1	18.7
Column percent	38.6	43.7	34.9	31.7
Total percent	3.7	8.9	4.1	6.3
56-65 years:				
Number	96*	590	187	334
Row percent	5.0	30.9	9.8	17.5
Column percent	10.9	31.5	17.3	18.3
Total percent	1.0	6.4	2.0	3.6
66 years or more:				
Number	180*	102*	58*	110
Row percent	31.1	17.6	10.0	22.3
Column percent	20.5	5.5	5.4	3.6
Total percent	2.0	1.1	.6	1.4

* The value of these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

Appendix table 11--Distribution of dairy owners--Northeast

Value of dairy animals

Age of operator: Item	Less than \$15,000	\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000	More than \$300,000
Less than 36 years:					
Number	2,875	3,276	2,560	1,580	82*
Row percent	27.7	31.6	24.7	15.2	.8
Column percent	15.5	23.0	26.6	16.8	24.8
Total percent	5.5	6.3	4.9	3.0	.2
36-45 years:					
Number	3,786	3,193	1,957	2,582	110
Row percent	32.6	27.5	16.8	22.2	.9
Column percent	20.4	22.4	20.3	27.5	33.3
Total percent	7.3	6.1	3.8	5.0	.2
46-55 years:					
Number	3,987	3,590	2,577	3,189	81
Row percent	29.7	26.7	19.2	23.8	.6
Column percent	21.5	25.2	26.8	34.0	24.5
Total percent	7.6	6.9	4.9	6.1	.2
56-65 years:					
Number	4,383	3,420	2,027	1,705	41
Row percent	37.9	29.5	17.5	14.7	.4
Column percent	23.6	24.0	21.1	18.2	12.4
Total percent	8.4	6.6	3.9	3.3	.1
66 years or more:					
Number	3,521	777	501	327	16*
Row percent	68.5	15.1	9.7	6.4	.3
Column percent	19.0	5.5	5.2	3.5	4.8
Total percent	6.8	1.5	1.0	.6	.0

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

Appendix table 12--Distribution of dairy owners--North Central

Value of dairy animals

Age of operator: Item	Less than \$15,000	\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000	More than \$300,000
Less than 36 years:					
Number	10,276	7,913	6,046	4,278	20*
Row percent	36.0	27.7	21.2	15.0	.1
Column percent	16.5	16.4	23.4	25.2	4.4
Total percent	6.7	5.1	3.9	2.8	.0
36-45 years:					
Number	10,904	9,350	6,382	4,240	70
Row percent	35.2	30.2	20.6	13.7	.2
Column percent	17.5	19.4	24.7	25.0	15.3
Total percent	7.1	6.1	4.2	2.8	.0
46-55 years:					
Number	17,016	15,206	8,050	4,775	173
Row percent	37.6	33.6	17.8	10.6	.4
Column percent	27.3	31.5	31.2	28.2	37.9
Total percent	11.1	9.9	5.2	3.1	.1
56-65 years:					
Number	15,019	13,361	4,775	3,382	194*
Row percent	40.9	36.4	13.0	9.2	.5
Column percent	24.1	27.7	18.5	19.9	42.5
Total percent	9.8	8.7	3.1	2.2	.1
66 years or more:					
Number	9,004	2,402	537*	284*	0
Row percent	73.6	19.6	4.4	2.3	0
Column percent	14.5	5.0	2.1	1.7	0
Total percent	5.9	1.6	.3	.2	0



* NATIONAL AGRICULTURAL LIBRARY

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

Appendix table 13--Distribution of dairy owners--South Atlantic

		Value of dairy animals				
Age of operator:		\$ Less than \$15,000	\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000	More than \$300,000
Item						
Less than 36 years:						
Number	1,633	501	188*	838	47	
Row percent	50.9	15.6	5.9	26.1	1.5	
Column percent	12.3	28.2	11.8	23.6	11.2	
Total percent	7.9	2.4	.9	4.1	.2	
36-45 years:						
Number	1,516	388	433	838	92	
Row percent	46.4	11.9	13.3	25.7	2.8	
Column percent	11.4	21.8	27.1	23.6	22.0	
Total percent	7.3	1.9	2.1	4.1	.4	
46-55 years:						
Number	429	516	1,080	1,080	146	
Row percent	7.5	9.1	19.0	19.0	2.6	
Column percent	24.1	32.3	30.5	30.5	34.9	
Total percent	2.1	2.5	5.2	5.2	.7	
56-65 years:						
Number	3,523	429	516	1,080	1,080	
Row percent	61.9	7.5	9.1	19.0	19.0	
Column percent	26.5	24.1	32.3	30.5	30.5	
Total percent	17.1	2.1	2.5	5.2	5.2	
66 years or more:						
Number	4,008	264	408	692	85	
Row percent	73.4	4.8	7.5	12.7	1.6	
Column percent	30.1	14.8	25.5	19.5	20.3	
Total percent	19.4	1.3	2.0	3.4	.4	

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

Appendix table 14--Distribution of dairy owners--South Central

Age of operator: Item	Value of dairy animals				
	Less than \$15,000	\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000	More than \$300,000
Less than 36 years:					
Number	3,696	554	1,125	1,856	13*
Row percent	51.0	7.6	15.5	25.6	.2
Column percent	15.2	10.5	29.2	35.1	11.7
Total percent	9.5	1.4	2.9	4.8	.0
36-45 years:					
Number	3,432	1,415	631	1,521	23*
Row percent	48.9	20.2	9.0	21.7	.3
Column percent	14.1	26.8	16.4	28.7	20.7
Total percent	8.8	3.6	1.6	3.9	.1
46-55 years:					
Number	4,137	1,700	1,756	1,445	49
Row percent	45.5	18.7	19.3	15.9	.5
Column percent	17.0	32.3	45.6	27.3	44.1
Total percent	10.7	4.4	4.5	3.7	.1
56-65 years:					
Number	7,835	957	340*	396	22*
Row percent	82.0	10.0	3.6	4.1	.2
Column percent	32.3	18.2	8.8	7.5	19.8
Total percent	20.2	2.5	.9	1.0	.1
66 years or more:					
Number	5,165	645	0	74*	4*
Row percent	87.7	11.0	0	1.3	.1
Column percent	21.3	12.2	0	1.4	3.6
Total percent	13.3	1.7	0	.2	.0

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

		Value of dairy animals				
Age of operator:		\$15,001-\$45,000	\$45,001-\$75,000	\$75,001-\$300,000	\$300,000	
Item	Less than \$15,000					
Less than 36 years:						
Number	3,540	183*	324	869	289	
Row percent	68.0	3.5	6.2	16.7	5.6	
Column percent	21.2	6.9	22.2	22.6	15.4	
Total percent	13.4	.7	1.2	3.3	1.1	
36-45 years:						
Number	3,730	330	315	1,029	530	
Row percent	62.9	5.6	5.3	17.3	8.9	
Column percent	22.4	12.4	21.6	26.8	28.3	
Total percent	14.1	1.2	1.2	3.9	2.0	
46-55 years:						
Number	4,780	1,077	391	1,046	597	
Row percent	60.6	13.6	5.0	13.3	7.6	
Column percent	28.7	40.5	26.8	27.3	31.9	
Total percent	18.0	4.1	1.5	3.9	2.3	
56-65 years:						
Number	3,058	828	370	722	347	
Row percent	57.4	15.5	6.9	13.6	6.5	
Column percent	18.3	31.1	25.4	18.8	18.5	
Total percent	11.5	3.1	1.4	2.7	1.3	
66 years or more:						
Number	1,560	244*	58*	171*	110	
Row percent	72.8	11.4	2.7	8.0	5.1	
Column percent	9.4	9.2	4.0	4.5	5.9	
Total percent	5.9	.9	.2	.6	.4	

* The values in these cells of the table are based on fewer than 10 observations. As a result, the estimates of means and frequencies contain considerable error.

